Water Heater Unit

***Thermo Top E* Additional Heater** e1 00 0003

***Thermo Top C* Additional Heater** e1 00 0002

***Thermo Top P* Additional Heater** e1 00 0104

Installation Instructions

Mazda 6

Gasoline
from Model Year 2008
Left-hand drive vehicle
Manual transmission

WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating systems may cause a fire or result in the emission of carbon monoxide, which can be fatal. Serious or fatal injuries can be caused as a result.

Specialist company training, technical documentation, specialized tools and equipment are required to install and repair Webasto heating and cooling systems.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

ALWAYS follow all Webasto installation and repair instructions and observe all warnings.

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

Ident. No.:1313390A_EN Fee Euro 10.00
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Validity

Manufacturer	Model	Type	EG-BE No./ABE
Mazda	6	GH	e1 * 2001/116 * 0448 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
L8D	Gasoline	88	1798
L5X	Gasoline	108	1999
LFX	Gasoline	122	2488

Vehicle and engine types, equipment variants and national specifications not listed in these installation instructions have not been tested. However, installation according to these installation instructions may be possible.

The installation location of the digital timer should be confirmed with the end customer before installation.

Heater Unit/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories with desired heater control	See price list
1	Installation kit for Mazda 6 Gasoline	1313389A

Heater unit recommended for the respective vehicle class:

Vehicle	Heater unit
Compact car	Thermo Top E
Mid-size car, station wagon	Thermo Top C
Full-size car, van, offroader	Thermo Top P

The selection of the heater unit is based on the passenger compartment size of the vehicle and the level of comfort required by the customer!

Foreword

These installation instructions apply to Mazda 6 Gasoline vehicles - for validity, see page 2 - from model year 2008 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

However, the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top C/P/E* must always be observed.
The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties.
Sharp edges should be fitted with edge protectors (split-open plastic hose).
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

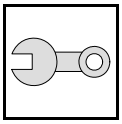
Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit

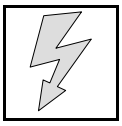
Explanatory Notes on Document

To provide you with a quick overview of the individual working steps, you will find an identification mark on the outside top right corner of the page in question.

Mechanical system

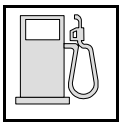


Electrical system



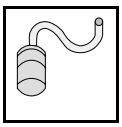
Water

Fuel



Exhaust gas

Combustion air



Special features are highlighted using the following symbols:

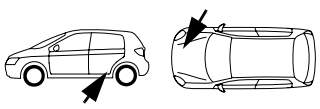
Specific risk of injury or fatal accidents.

Specific risk of damage to components.

Specific risk of fire or explosion.

Reference to general installation instructions of Webasto components or to the manufacturer's vehicle-specific documents.

Reference to a special technical feature.



The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

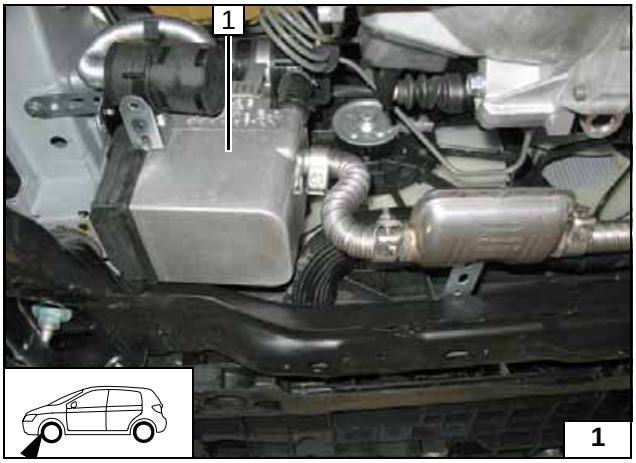
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

Preliminary Work

WARNING!

- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- Disconnect the battery "earth" or "ground" connection.
- Depressurize the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Completely remove the battery.
- Remove the air filter together with the intake hose.
- Remove the left-hand vehicle underbody trim.
- Remove the lower engine cover.
- Remove the rocker panel trim on the driver's side at the front.
- Remove the lower cover of the A-pillar trim in the driver's side footwell.
- Detach the BCM in the driver's side footwell.
- Remove the instrument panel trim below the steering wheel (only with Telestart T100 HTM).
- Remove the A/C control panel according to the manufacturer's instructions (only with automatic air-conditioning).

Remove page 25 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater unit installation location

1 Heater unit

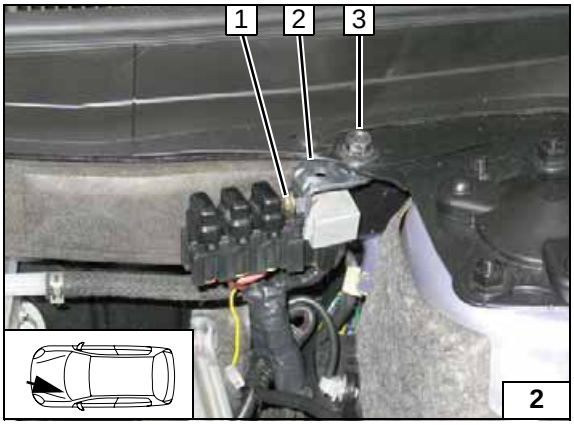
Installation location

Electrical system

Fuse holder, relay K3

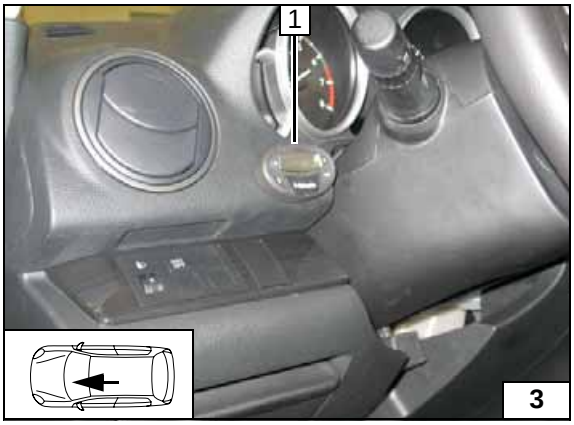
Replace 25 A fuse F3 with 10 A fuse.

1 M5x16 bolt, washer, fuse holder, K3 relay, flanged nut on angle bracket
2 Angle bracket
3 Original vehicle bolt

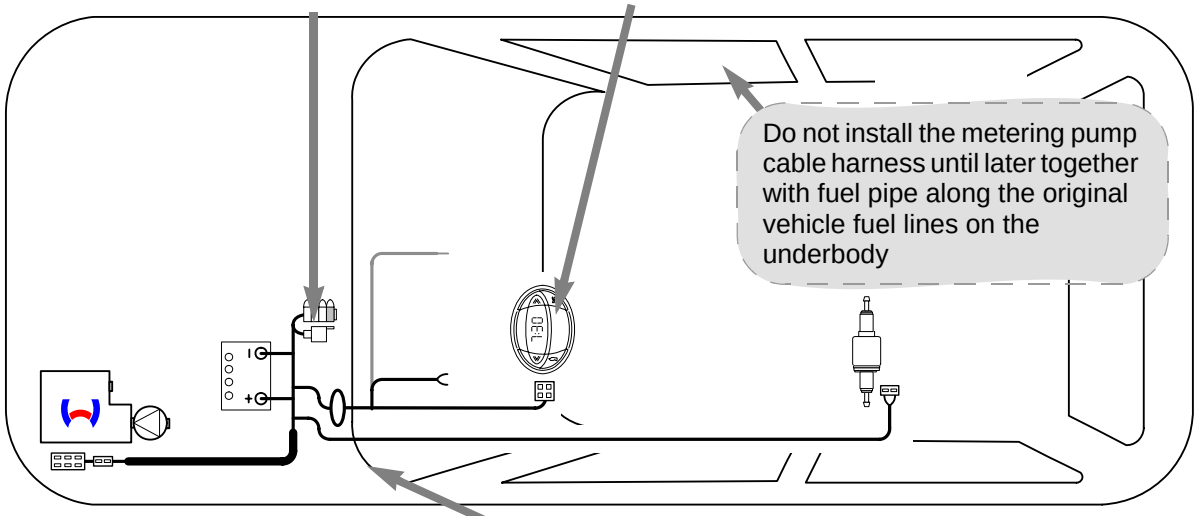


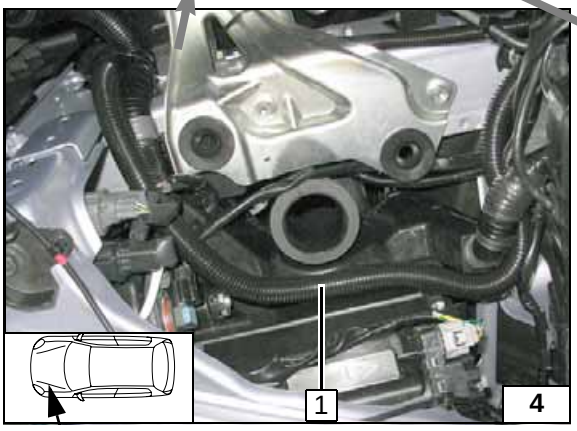
Digital timer

1 Digital timer



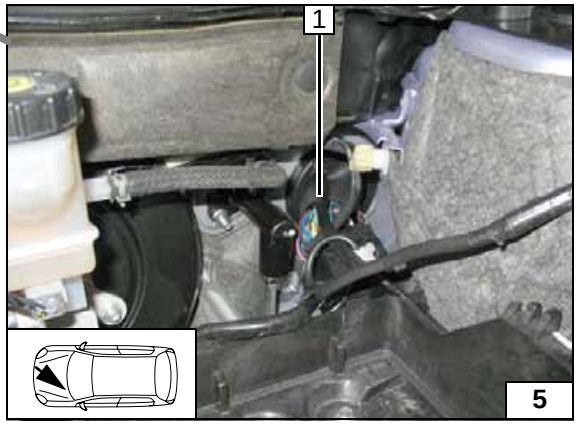
Wiring harness installation diagram


Do not install the metering pump cable harness until later together with fuel pipe along the original vehicle fuel lines on the underbody



Installing wiring harness of heater unit in corrugated tube

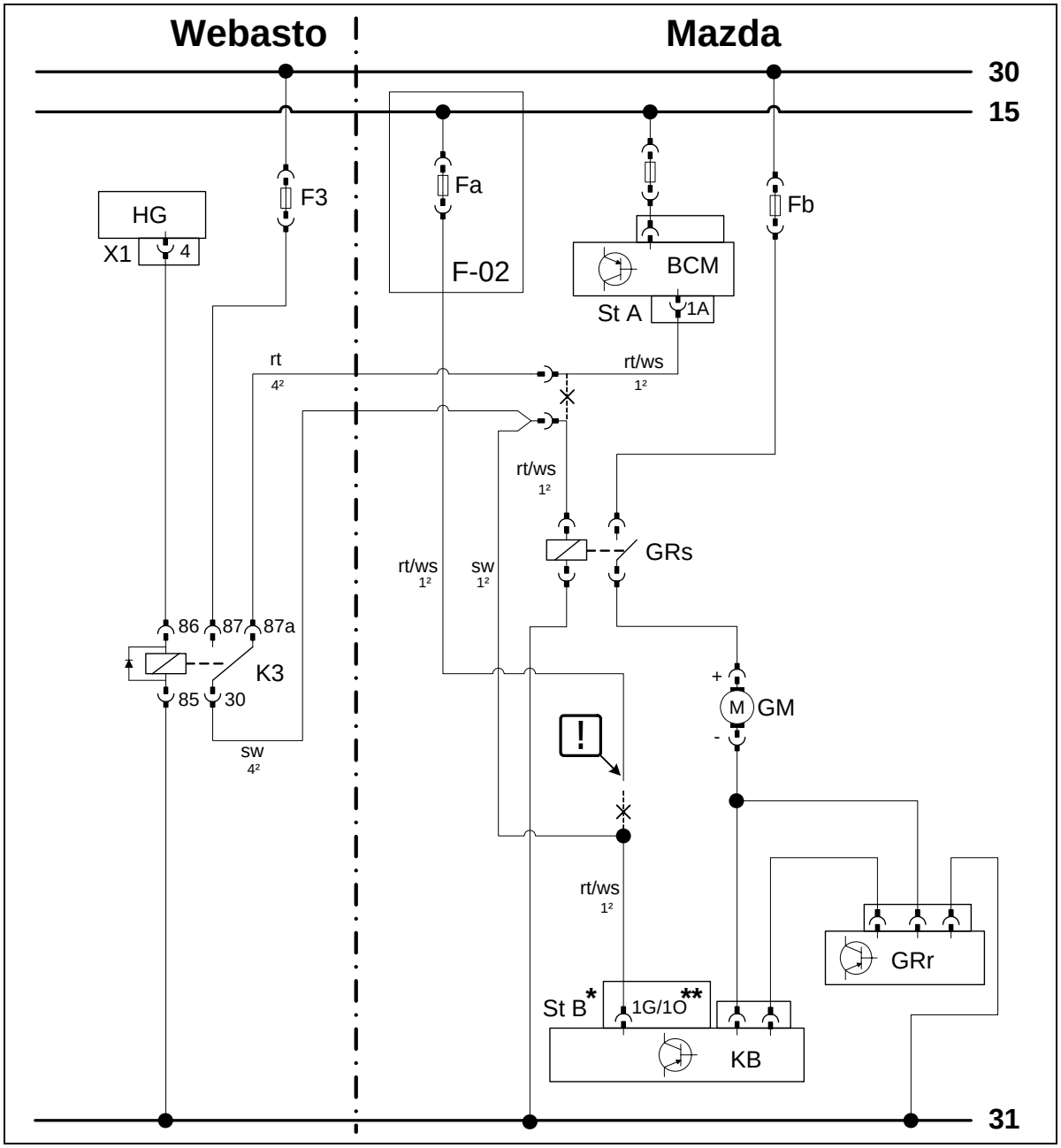
Slit 17 mm dia. corrugated tube, pull in wiring harness of heater unit and route to installation location of heater unit.



Wiring harness pass through

1 Protective rubber plug

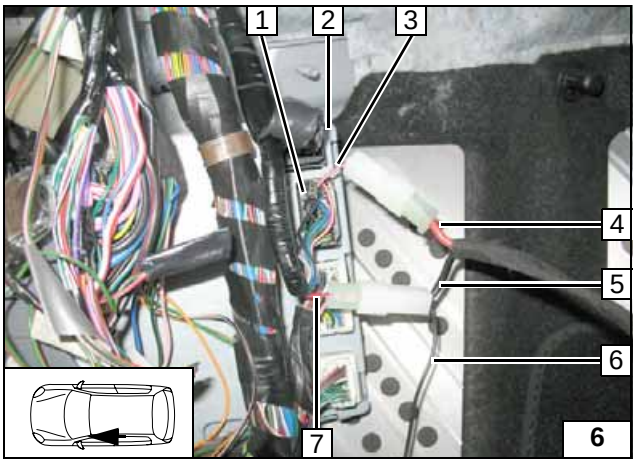
Fan controller



Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater unit connector	GRs	Fan relay	ws	white
F3	Replace 25 A with 10 A fuse.	GRr	Fan controller	sw	black
		Fb	40 A heater fuse		
K3	Fan relay	BCM	Body Control Module		
		STA	24-pin connector of BCM, black (0940-01A)		
		KB	Air-conditioning control pane		
		STB *	24-pin connector of KB with automatic air-conditioning: (0740-201A) Pin 1G **		
		STB *	24-pin connector of KB with manual air-conditioning: (0740-101A) Pin 1O **	X	Cutting point
				Wiring colors may vary.	

Wiring diagram

Legend



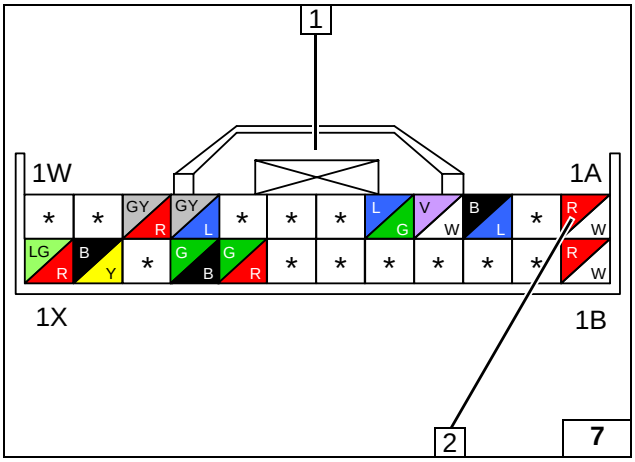
All vehicles

Connection on 24-pin connector 0940-01A, color black **1** from BCM **2.**
Produce connections as shown in wiring diagram.

Connector is located on rear side of BCM.

3 Red/white (rt/ws) wire of connector
4 Red (rt) wire from K3/87a
5 Black (sw) wire from K3/30
6 Route black (sw) wire 1² to A/C control panel
7 Red/white (rt/ws) wire of fan relay

Connection of fan relay on BCM



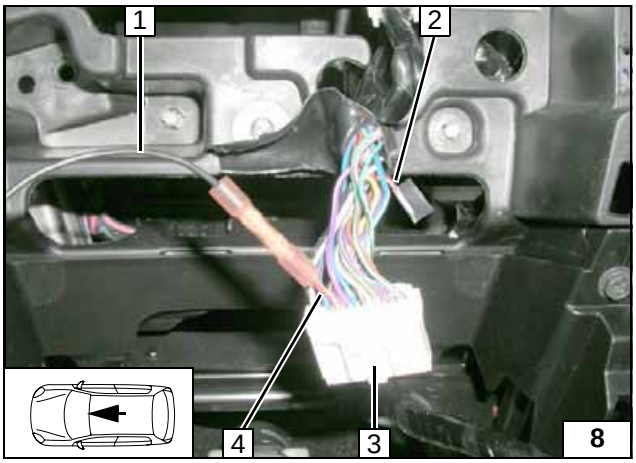
24-pin connector 0940-01A, color black **1** from BCM (on wire side)

2 Socket 1A, red/white (rt/ws) wire

Cable colors:

R - red
W - white
B - black
L - blue
V - violet
G - green
GY - gray
LG - light green
Y - yellow

BCM connector

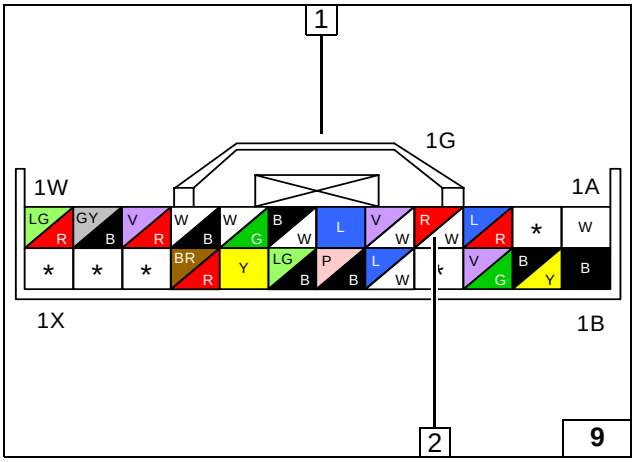


Automatic air-conditioning

Connection on connector B **3** of A/C control panel, Pin 1G.
Produce connections as shown in wiring diagram.

1 Black (sw) wire 1²
2 Insulate red/white (rt/ws) wire of 10 A air-conditioner fuse and tie back
4 Red/white (rt/ws) wire of connector B, Pin 1G

Connecting A/C control panel



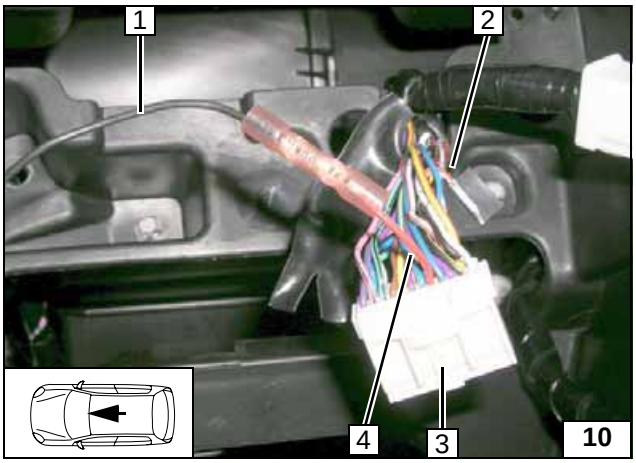
24-pin connector 0740-201A, white **1** of A/C control panel (on wire side)

2 Socket 1G, red/white (rt/ws) wire

Cable colors:

R - red
W - white
B - black
L - blue
V - violet
G - green
GY- gray
LG - light green
Y - yellow
BR - brown
P - pink

Connector KB

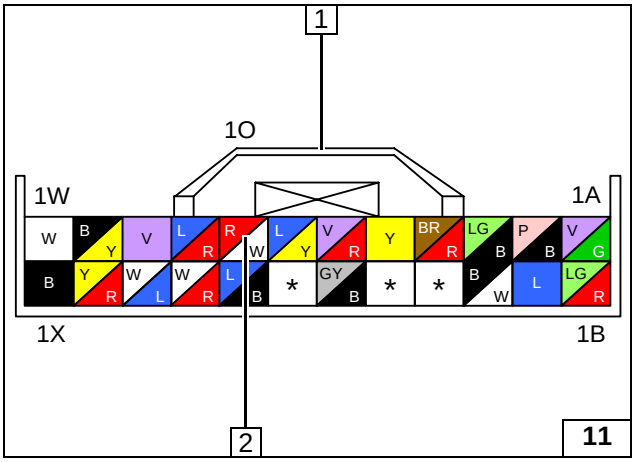


Manual air conditioner

Connection on connector B **3** of A/C control panel, Pin 1O.
Produce connections as shown in wiring diagram.

1 Black (sw) wire 1²
2 Insulate red/white (rt/ws) wire of 10 A air-conditioner fuse and tie back
4 Red/white (rt/ws) wire of connector B, Pin 1O

Connecting A/C control panel



24-pin connector 0740-101A, white **1** of A/C control panel (on wire side)

2 Socket 1O, red/white (rt/ws) wire

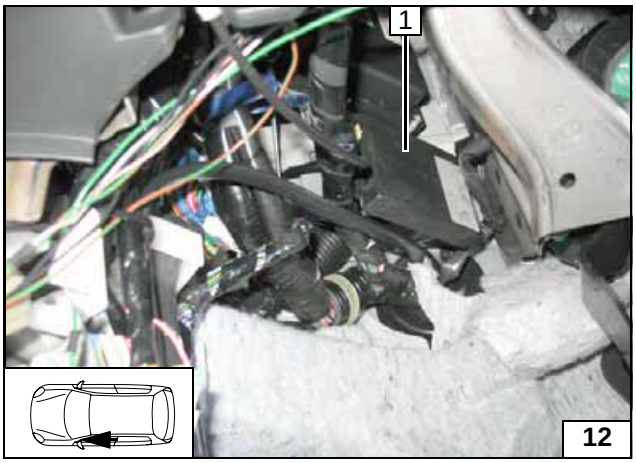
Connector KB

Cable colors:

R - red
W - white
B - black
L - blue
V - violet
G - green
GY- gray
LG - light green
Y - yellow
BR - brown
P - pink

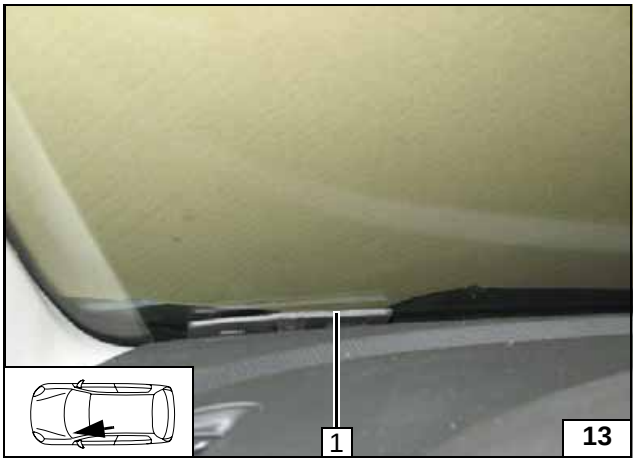
Remote option (Telestart)

Installing receiver



1 Receiver, original vehicle stud bolt, original vehicle flanged nut

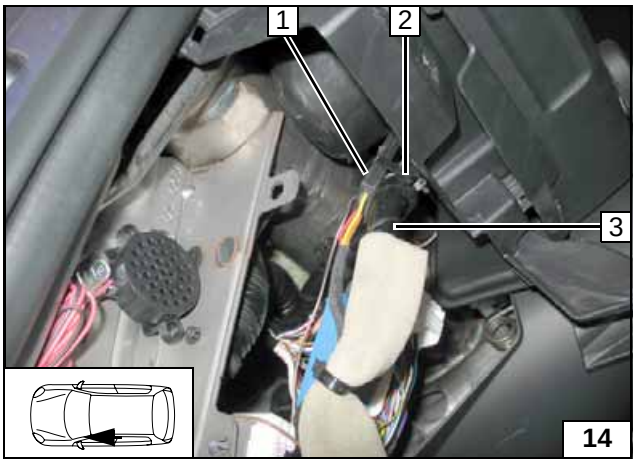
Installing antenna



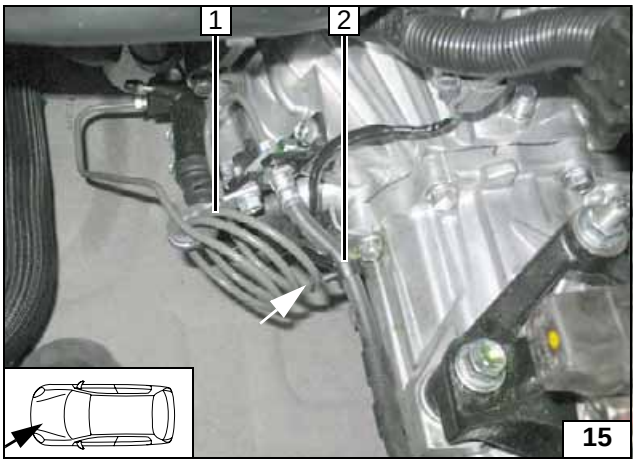
1 Antenna

Temperature sensor for HTM100 only

Installing temperature sensor



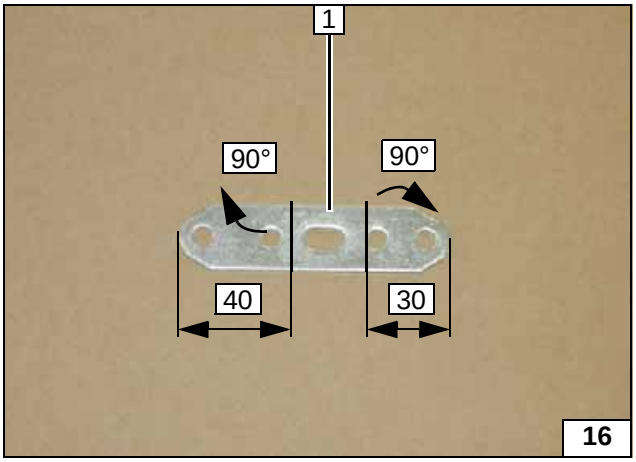
1 Temperature sensor
2 Cable tie
3 Original vehicle wiring harness



Preparing installation location

Align hydraulic line **1** for clutch actuation approx. 5-7 mm toward transmission and insert 4x7 line holder 2.

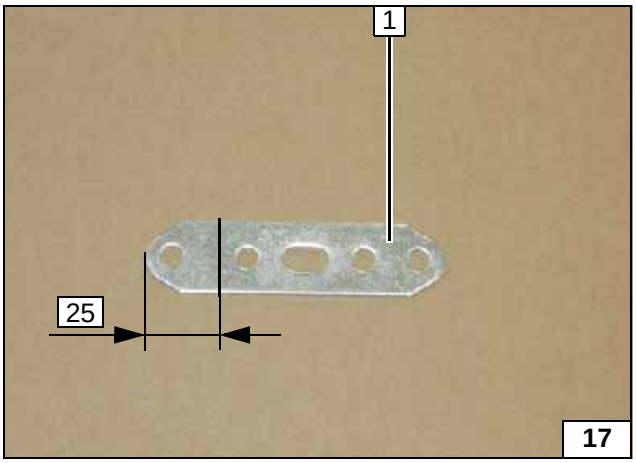
Inserting line holder



Preassembling bracket

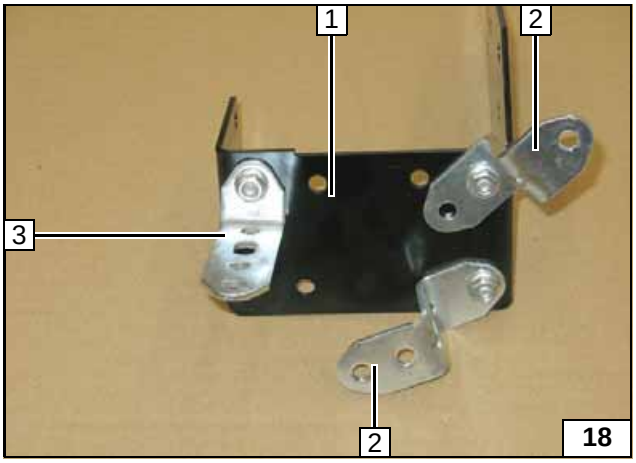
Bend 2 perforated brackets **1**.

Preparing perforated brackets



Bend perforated bracket **1** by 90°.

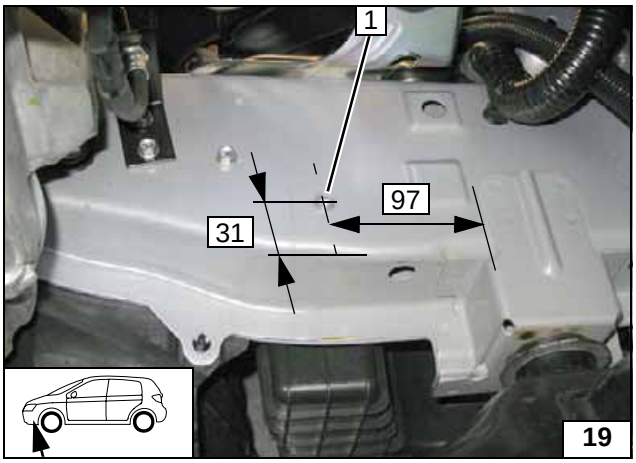
Preparing perforated bracket



The screw fitting of perforated brackets **2** [2x] and **3** on bracket **1** must be tightened hand-tight.

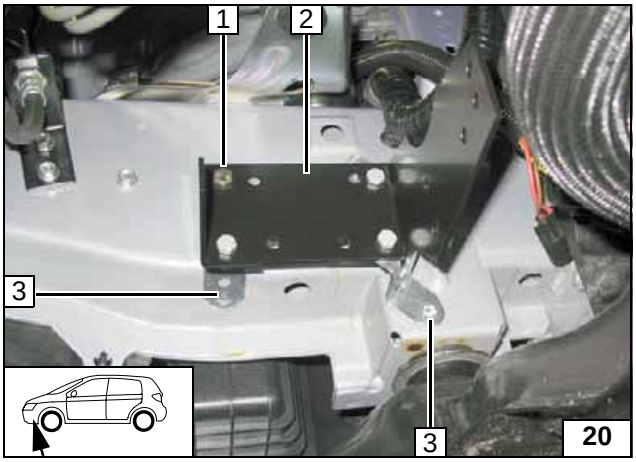
2 Perforated bracket [2x], M6x16 bolt [2x], flanged nut [2x]
3 Perforated bracket, M6x16 bolt, flanged nut

Preassembling bracket



1 9.1 mm dia. hole; M6 rivet nut

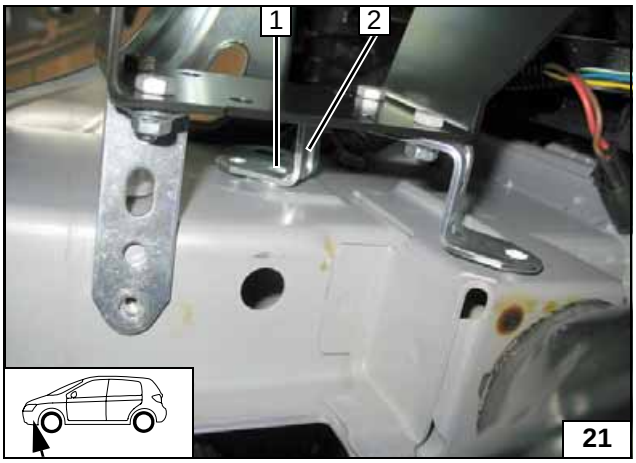
Installing rivet nut



Align bracket **2** and perforated brackets **3** relative to surfaces.

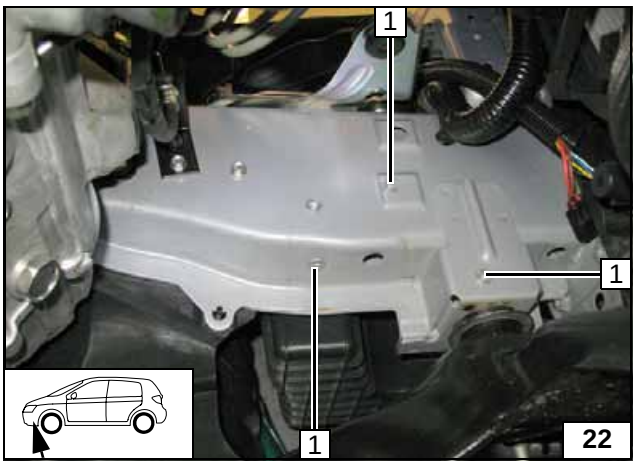
1 M6x60 bolt, spring lockwasher, 40 mm shim
3 Hole pattern for 9.1 mm dia. hole [2x]

Copying hole pattern



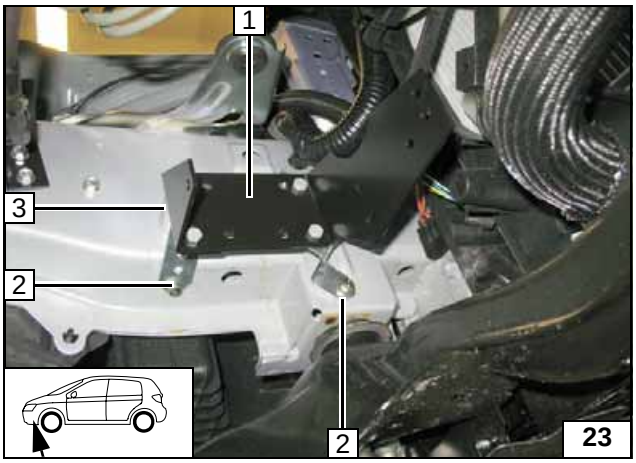
Align perforated bracket **2** relative to surface, copy hole pattern **1** for 9.1 mm dia. hole. Remove bracket.

Copying hole pattern



1 M6 rivet nut [3x]

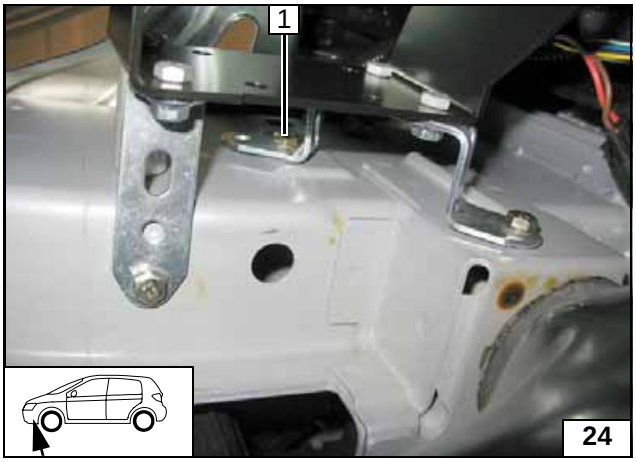
Installing rivet nut



Tighten screw fittings of perforated brackets [2x] on bracket **1**.

2 M6x20 bolt [2x], spring lockwasher [2x]
3 40 mm spacer, M6x60 bolt, spring lockwasher

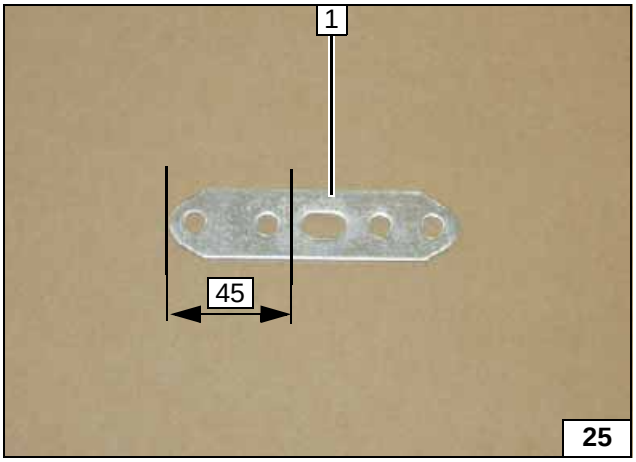
Installing bracket



1 M6x20 bolt, spring lockwasher

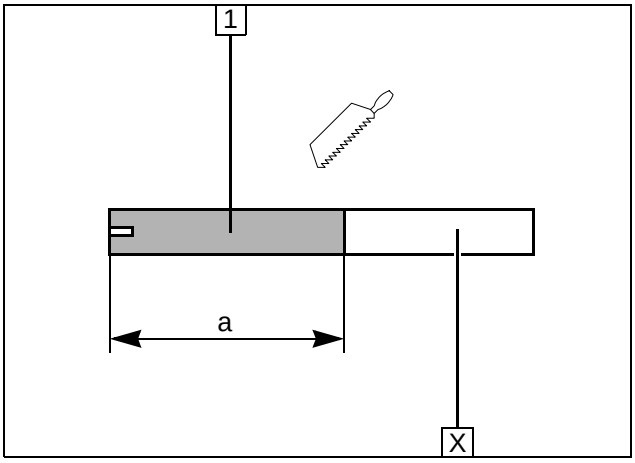
Installing bracket

Premounting heater unit



Bend perforated bracket **1** by 90°.

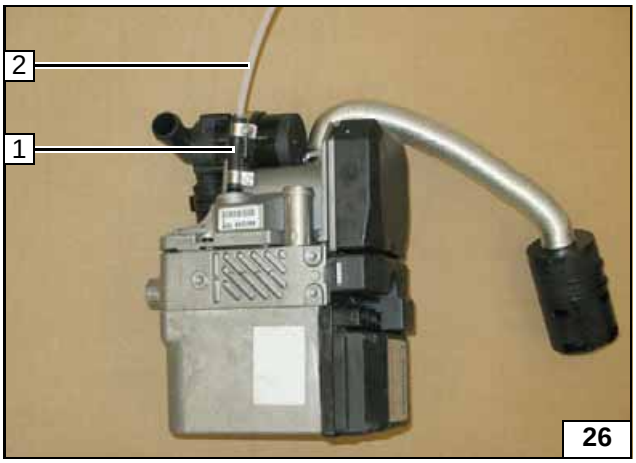
Preparing perforated bracket



1 Combustion air pipe
a = 250

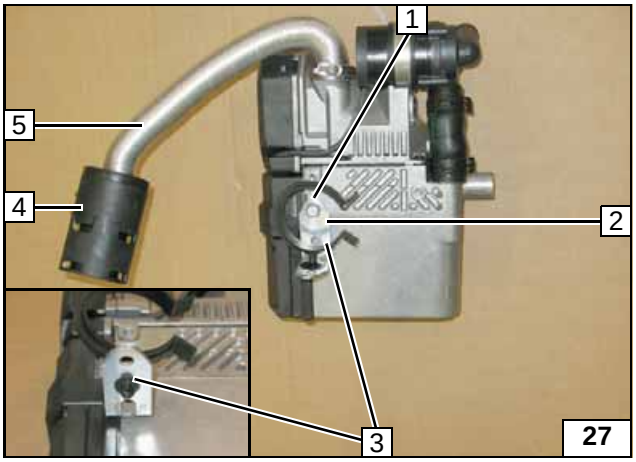
Discard section **X**

Cutting combustion air pipe to length



1 Hose section, 10 mm dia. clamp [2x]
2 Fuel line

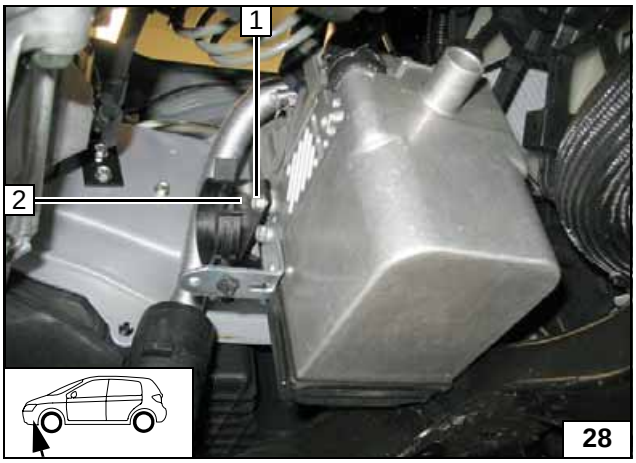
Premounting heater unit



1 Ejot screw
2 Perforated bracket
3 Retaining clip, pin lock
4 Combustion-air intake muffler
5 Combustion-air intake pipe, 27 mm dia. clamp

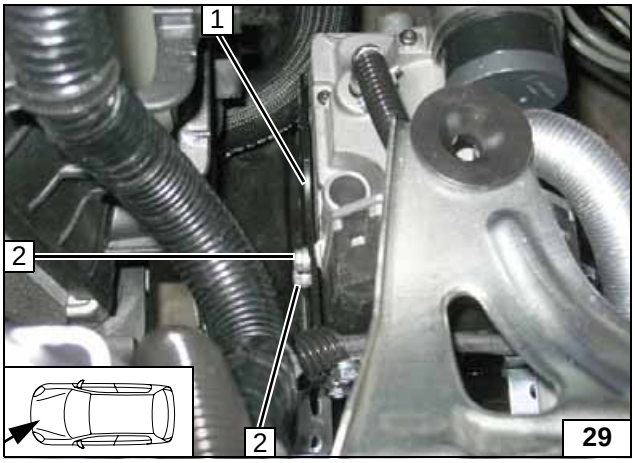
Premounting heater unit

Installing heater unit



1 Ejot screw
2 Bracket

Installing heater unit



1 Bracket
2 Ejot screw [2x]

Installing heater unit

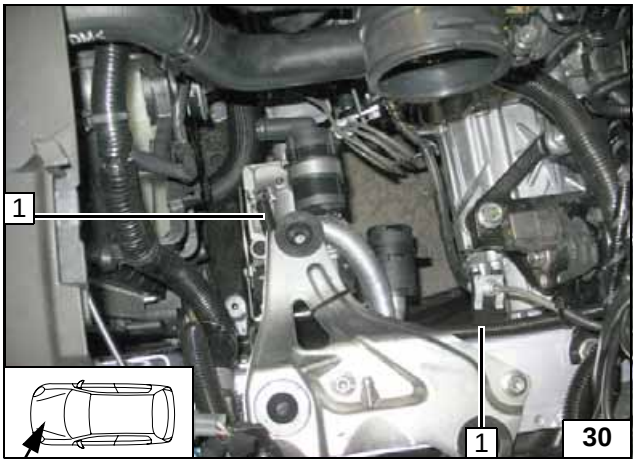
Fuel

CAUTION!
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off with an appropriate container.

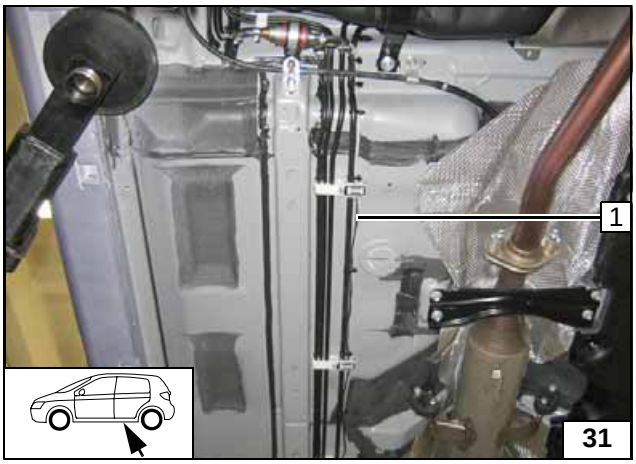
Install fuel line and metering-pump wiring harness so that they are protected against stone impact.
Unless specified otherwise, always fasten using cable ties.
Mount the fuel line and wiring harness with rub protection on sharp edges.

WARNING!
The fuel line and wiring harness are routed to the metering pump in as shown in the wiring harness routing diagram.



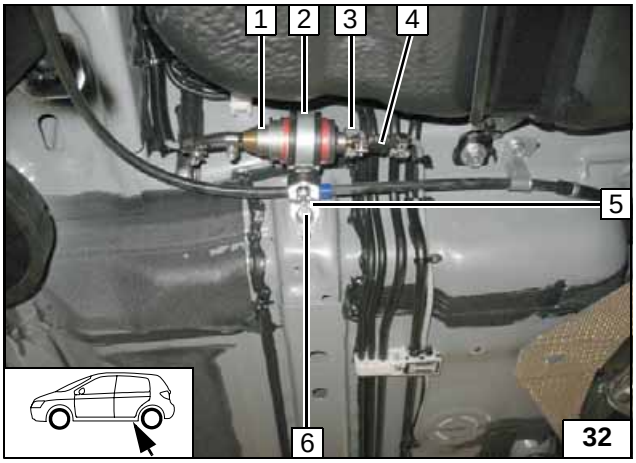
Mount 10 mm dia., 1,100 mm long corrugated tube **1** on fuel line and route to underbody.

Installing lines



Route fuel line and wiring harness of metering pump **1** along original vehicle lines and secure with cable ties.

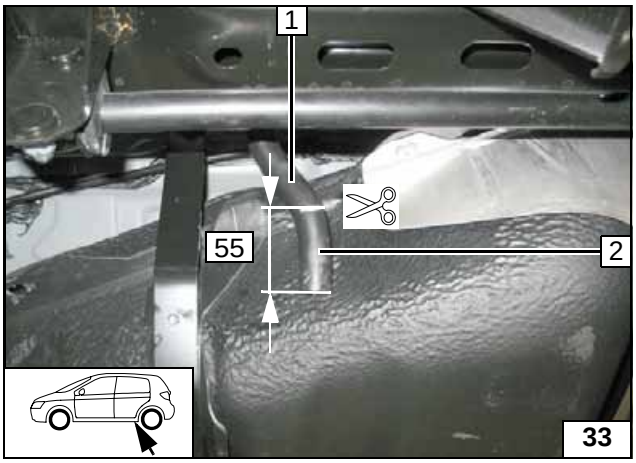
Wiring routing



Drill out hole in angle bracket **5** on short leg to 8.5 mm dia. and install with original vehicle bolt **6**.

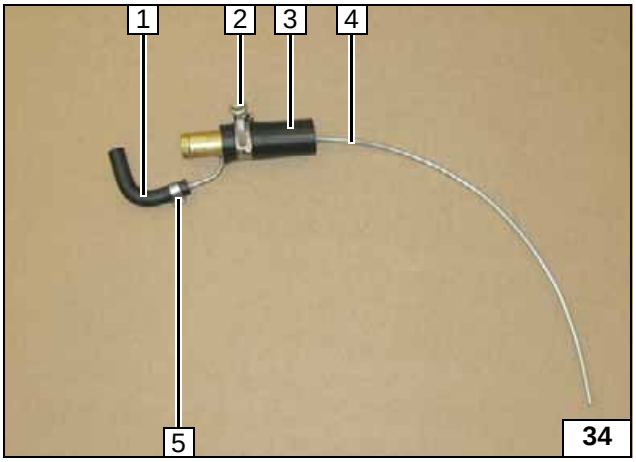
1 Metering pump
2 Rubber-coated p-clamp, silent block, flanged nut [2x]
3 Wiring harness of metering pump, connector mounted
4 Hose section, 10 mm dia. clamp [2x], fuel line

Installing metering pump



Pull fuel-tank vent line **1** off fuel tank and cut to length; hose section **1** and **2** will be reused.

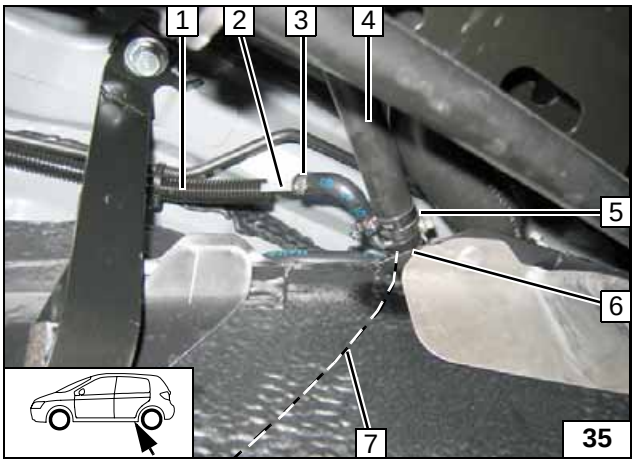
Removing fuel



Shape fuel standpipe **4** according to template and cut to length.
Mount with 3.5 mm dia. molded hose **1** on connection piece of fuel standpipe **4**.

2 16-24 mm dia. clamp
3 Hose section of 55 mm ventilation line
5 8 mm dia. clamp

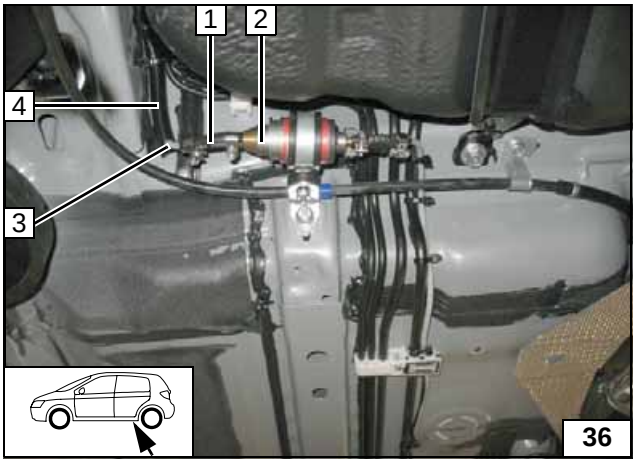
Premounting fuel standpipe



Insert fuel standpipe while aligning standpipe **7** relative to bottom of fuel tank. Secure hose section **6** of ventilation line on fuel tank again with original vehicle clamp.

1 10 mm dia. corrugated tube
2 Fuel line
3 10 mm dia. clamp
4 Fuel-tank vent line
5 16-24 mm dia. clamp

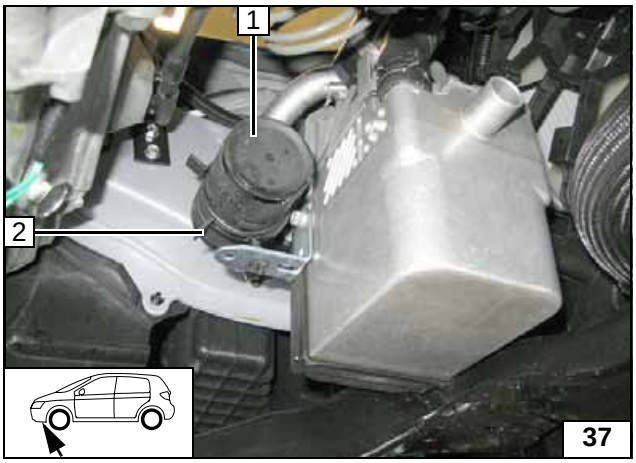
Installing fuel standpipe



Check the position of the components; adjust if necessary. Check that they have free clearance.

1 Hose section, 10 mm dia. clamp [2x]
2 Metering pump
3 Fuel line
4 10 mm dia. corrugated tube

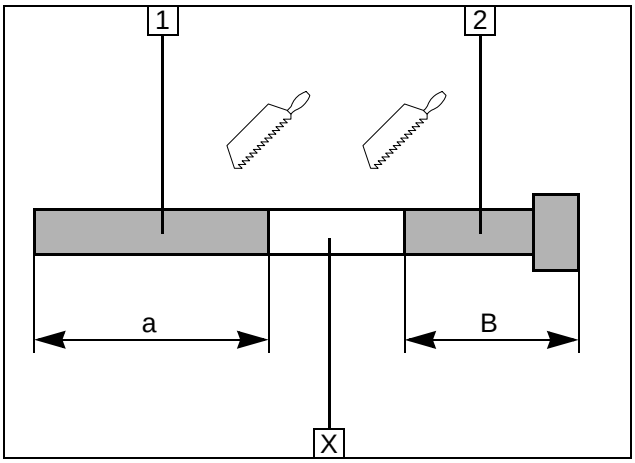
Connecting metering pump



Combustion air

Insert muffler **1** in retaining clip **2**.

Inserting muffler

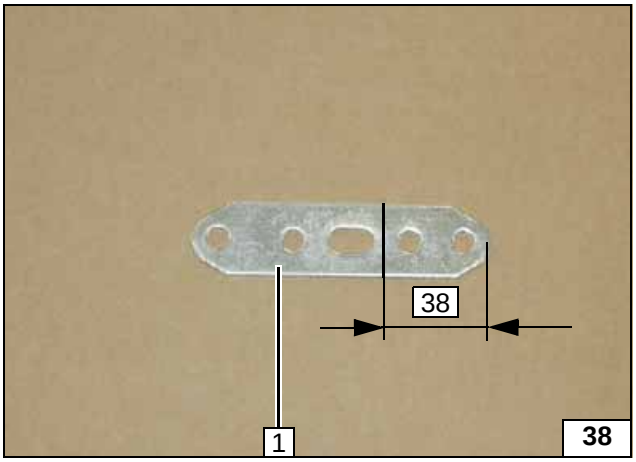


Exhaust gas

1 Exhaust pipe
a = 190
2 Exhaust end section
b = 380

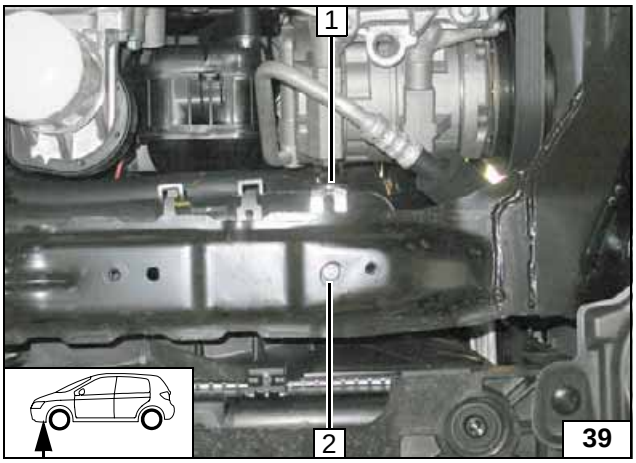
Discard section **X**

Preparing exhaust pipe



Bend perforated bracket **1** by 90°.

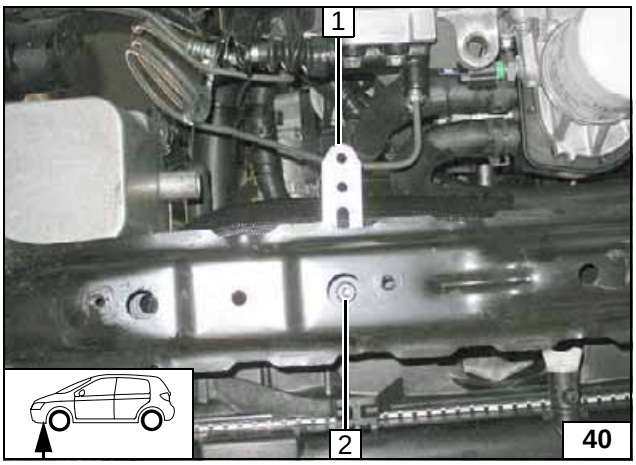
Preparing perforated bracket



Drill 7 mm dia. hole in center through existing hole at Position **2**.

1 Perforated bracket, angled down
2 M6x20 bolt, flanged nut

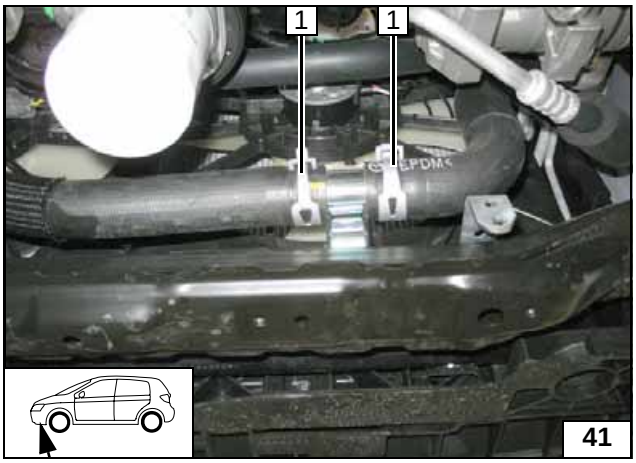
Preparing installation of exhaust system



Drill 7 mm dia. hole in center through existing hole at Position **2**.

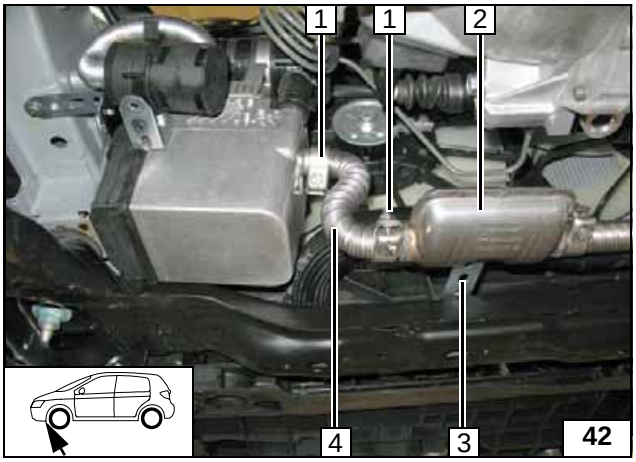
1 Perforated bracket
2 M6x20 bolt, flanged nut

Preparing installation of exhaust system



Turn original vehicle spring clips **1** [2x] upward.

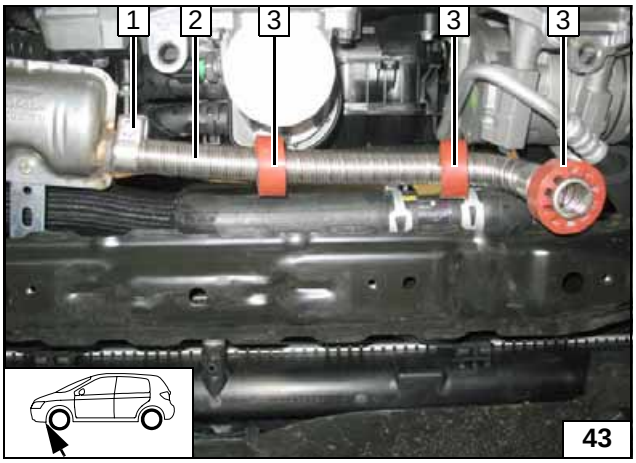
Preparing installation of exhaust system



Ensure sufficient distance to neighboring components.

1 Hose clamp [2x]
2 Exhaust muffler, M6x20 bolt, flanged nut
3 Perperforated bracket
4 Exhaust pipe

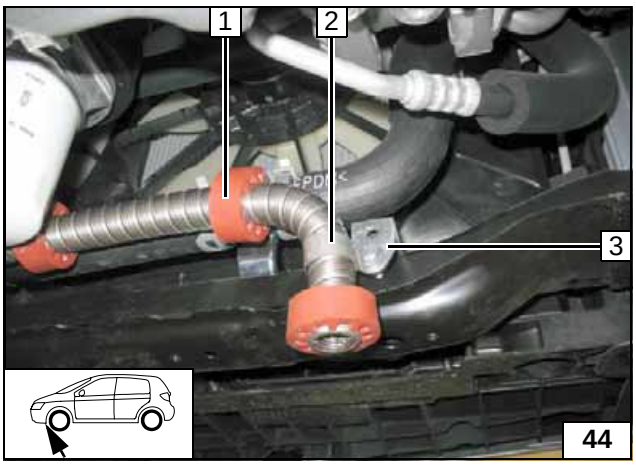
Installing exhaust muffler



Ensure sufficient distance to neighboring components.

1 Hose clamp
2 Exhaust-pipe end section
3 Red (rt) rubber profile [3x]

Installing exhaust-pipe end section



Ensure sufficient distance to neighboring components.
Aligning red (rt) rubber isolator **1**.

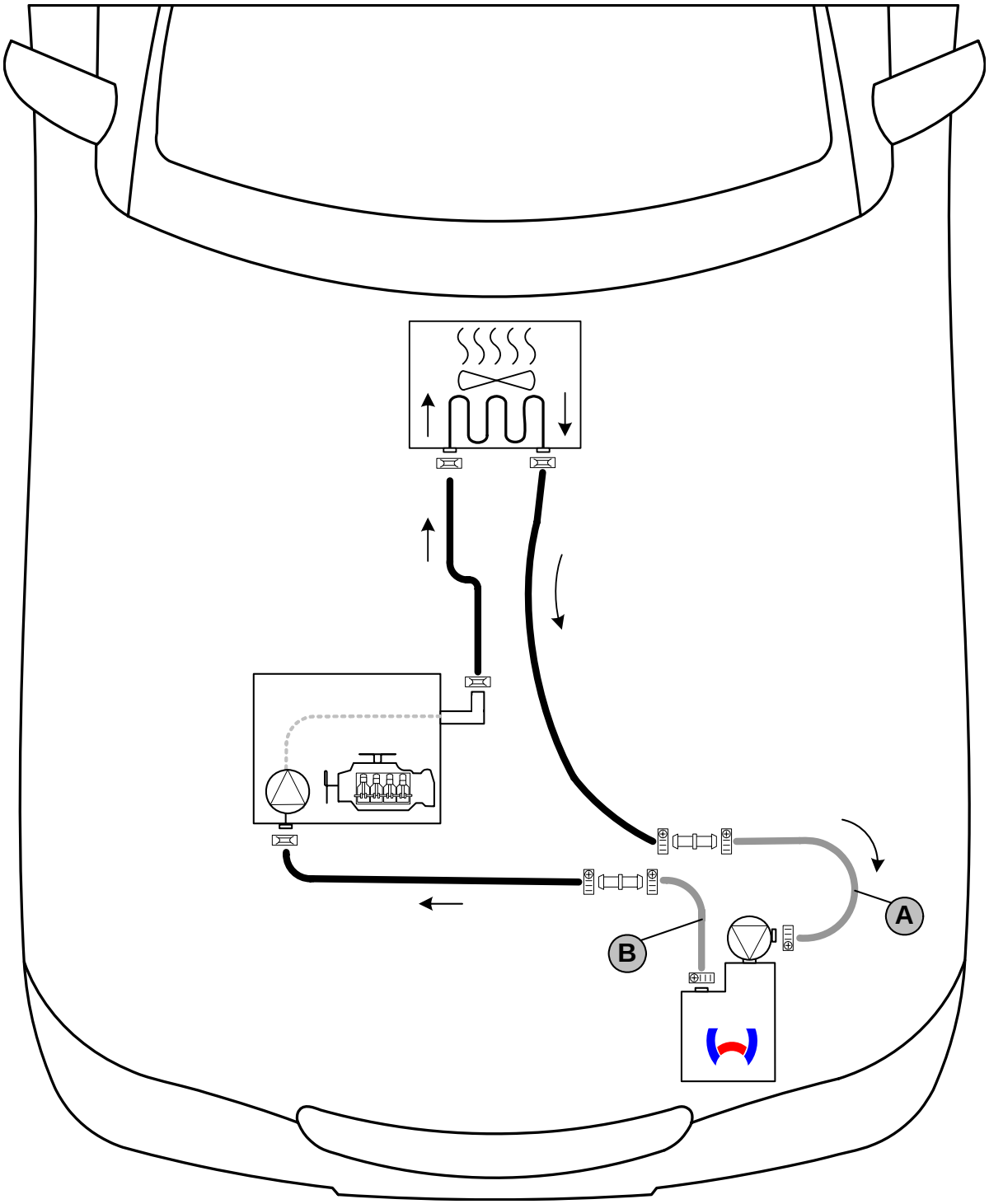
2 Pipe clamp, M6x20 bolt, flanged nut
3 Perforated bracket, angled down

Installing exhaust-pipe end section

Coolant

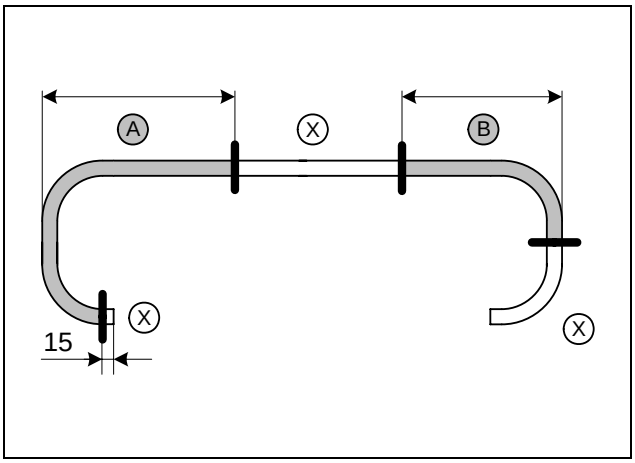
WARNING!
Any coolant running off should be collected using an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged! When installing the coolant hose, the heater unit must be filled with coolant.
The connection should be "inline" based on the following diagram:

Coolant routing diagram



All connecting pipes = 17x20 dia..
All hose clamps without a specific designation = 20-27 mm dia.

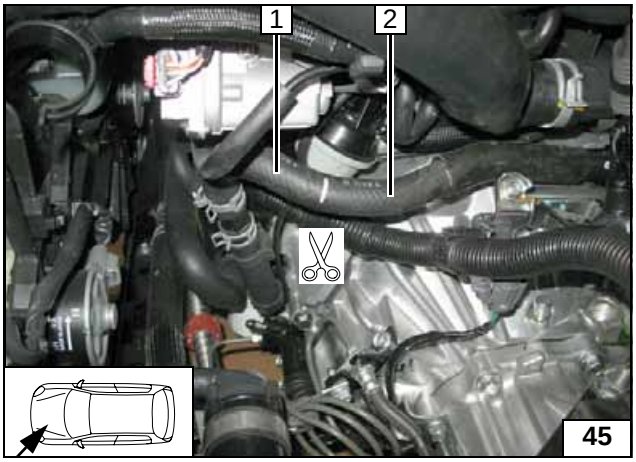
Cutting coolant hoses to length



a = 150
b = 190

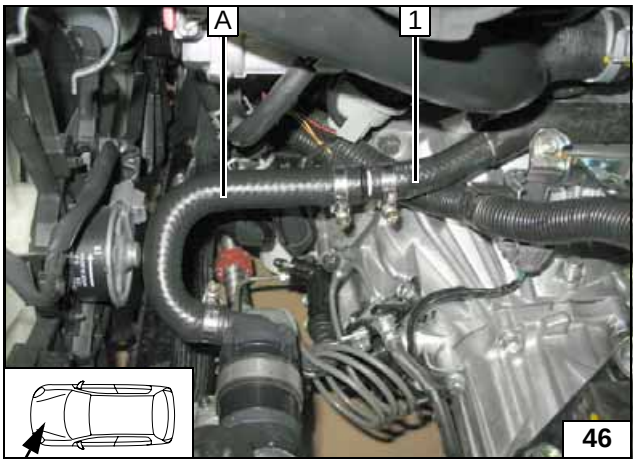
Discard section **X**

Cutting point



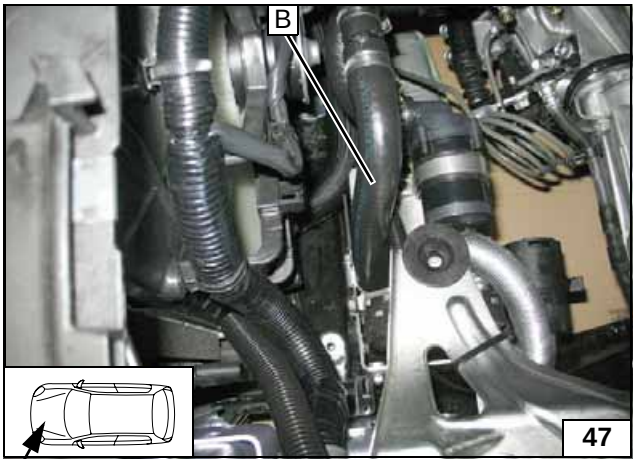
1 Hose section on engine inlet
2 Hose section on heat exchange outlet

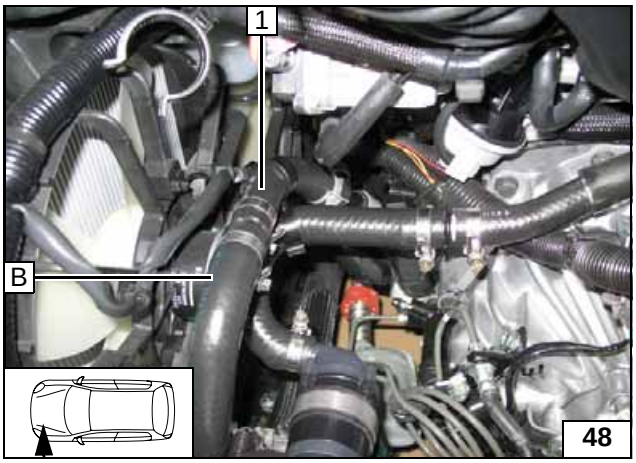
Connection of heat exchange outlet and heater unit



1 Hose section on heat exchange outlet

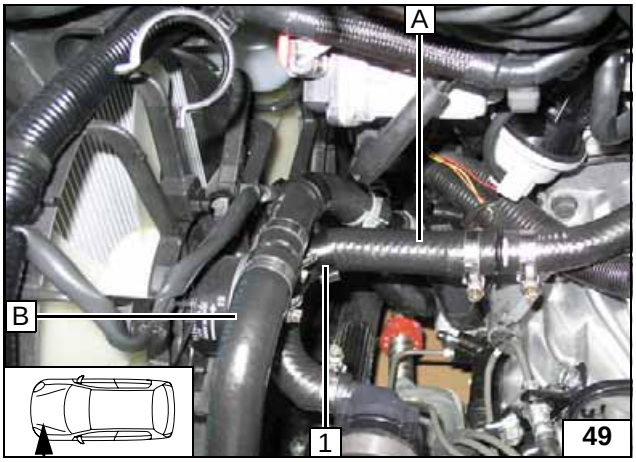
Connecting heater unit





1 Hose section on engine inlet, turned toward heater unit

Connection of engine inlet



Align coolant hose. Ensure sufficient distance to neighboring components.

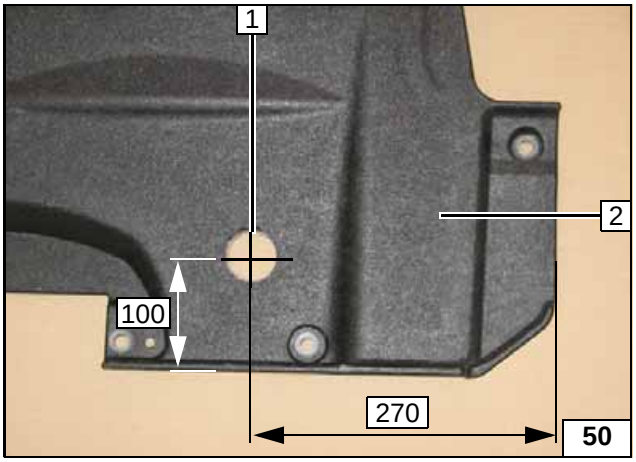
1 Spacer bracket

Installing spacer bracket

Final Work

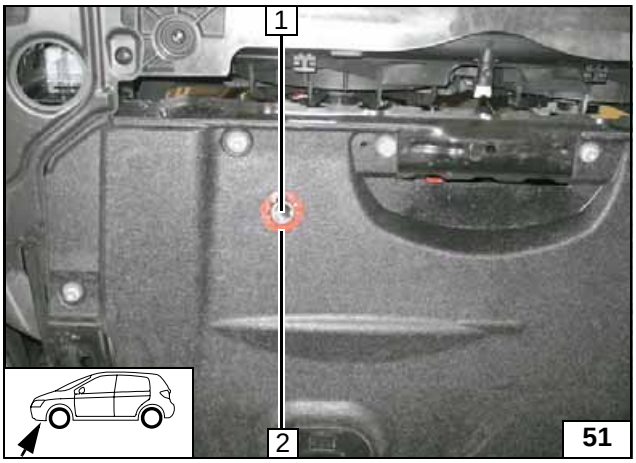
WARNING!
Reassemble the disassembled components in reverse order.
Check all hoses, clamps and all electrical connections for firm seating.
Secure all loose cables using cable ties.
Only use manufacturer-approved coolant.
Spray the heater unit components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- Connect the battery
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Check the proper operation of the additional heater, see the operating instructions/installation instructions.
- Attach the "Switch off additional heater before refueling" sticker to the left-hand B-pillar.



1 42 mm dia. hole
2 Underride protection

Preparing underride protection

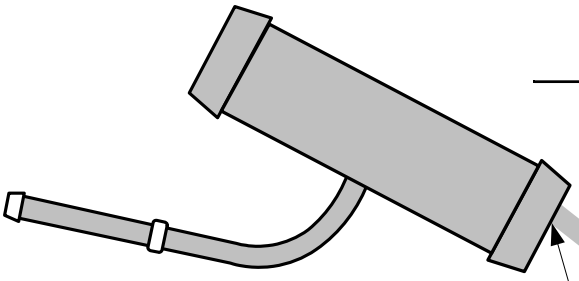


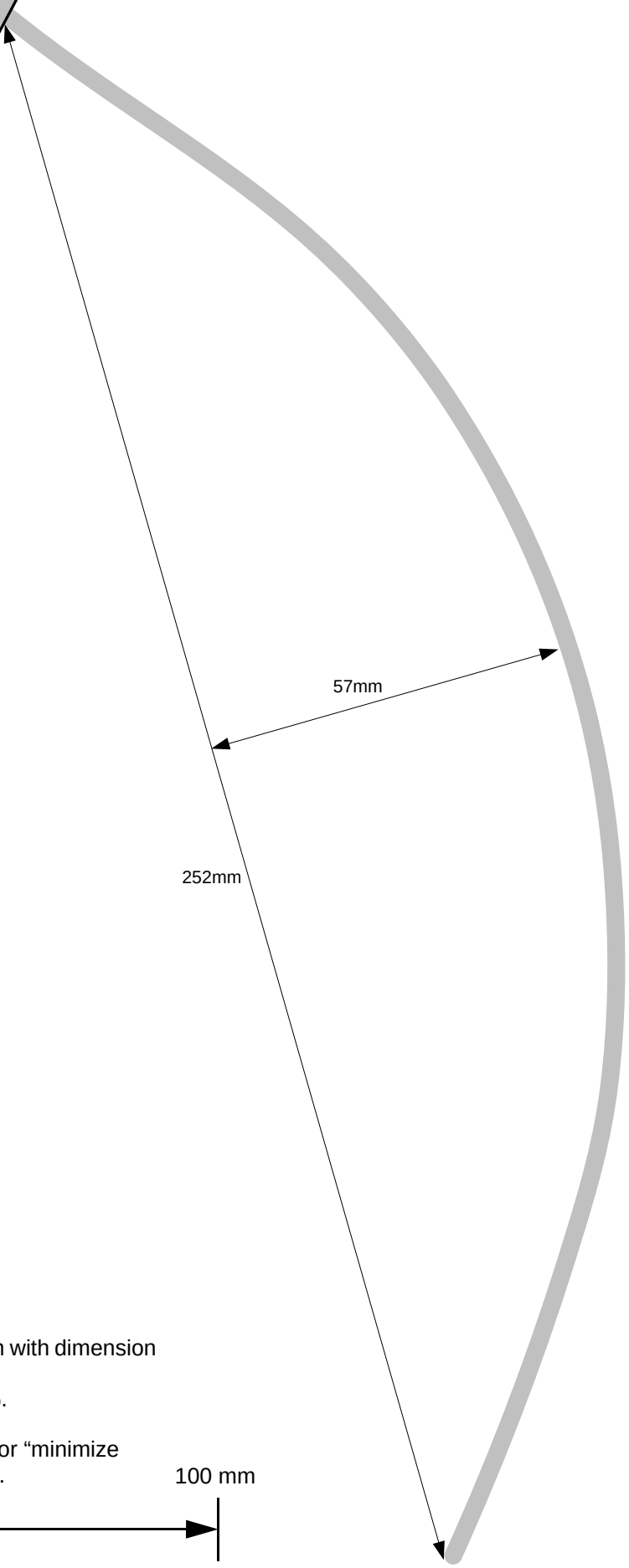
Align exhaust end section **1** flush on red rubber isolator **2**.

Mounting rubber isolator

Webasto AG
Postfach 80 - 82132 Stockdorf
Hotline 01805 / 932278 - Hotfax 0395 / 5592-353
http://www.webasto.de

Template for Fuel Standpipe





100 mm

0

100 mm

Scale 1:1

Compare the size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

Set the printer settings to “no margin” or “minimize margins” and 100% of the normal size.

Operating Instructions for End Customer

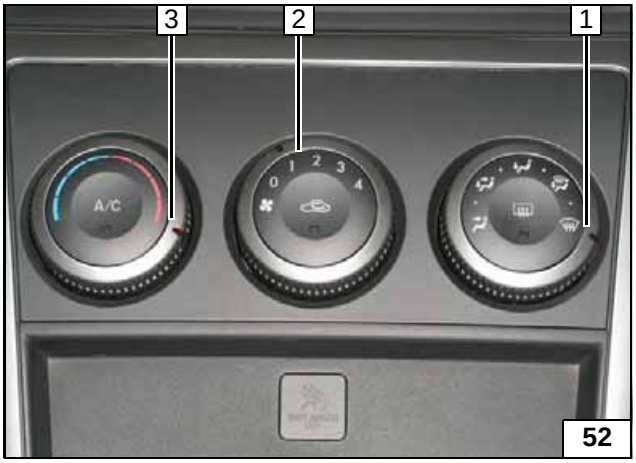
Please remove page and add to the vehicle operating instructions.

Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

WARNING:
The alarm system must be deactivated for the duration of the heater operation!

Before parking the vehicle, make the following settings:

Manual air conditioning



1 Air outlet to windshield
2 Set fan to level "1", or possibly "2"
3 Set temperature to "max."

Automatic air-conditioning

1 Air outlet to windshield
2 Set temperature on both sides to "29°"
3 Set fan to level "1", or possibly "2"